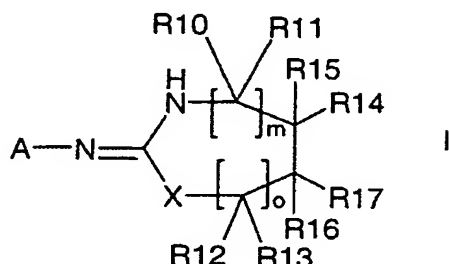


What is claimed is:

1. A process for preparing heterocycles of formula I



5

wherein:

X is sulfur, oxygen or NR₅
wherein R₅ is hydrogen or (C1-C4)alkyl;

10 m and o are each independently zero, 1 or 2;

A is either a) phenyl, naphthyl or heteroaryl, each of which is optionally substituted by 1, 2, 3, 4 or 5 R₁₁ radicals

wherein R₁₁ is, in each case, independently selected from the group consisting of (C1-C4)alkyl, F, Cl, Br, I, CN, NO₂,
15 OH, O(C1-C4)alkyl, and COO(C1-C4)alkyl, and some or all of the hydrogen atoms of the alkyl radicals may be replaced by fluorine atoms;

or b) selected from (C1-C4)alkyl, (C2-C5)alkenyl, (C2-C5)alkynyl, (C3-C8)cycloalkyl, and (C4-C8)cycloalkenyl radicals

20 wherein said radicals may each independently be substituted by (C1-C4)alkyl or (C3-C6)cycloalkyl, and wherein some or all of the hydrogen atoms of the alkyl, alkenyl, alkynyl, cycloalkyl and cycloalkenyl radicals may be replaced by fluorine atoms;

25 R₁₄, R₁₅, R₁₆ and R₁₇

are each independently selected from hydrogen, F and (C1-C4)alkyl, wherein some or all of the hydrogen atoms of the alkyl radicals may be replaced by fluorine atoms;

or

30 R₁₄ and R₁₆ together are a bond, and

R15 and R17, together with the two carbon atoms to which they are bonded, form an aromatic six-membered carbocycle, in which one or two carbon atoms may be replaced by nitrogen, or a thiophene ring,

5 wherein the aromatic six-membered carbocycle and the thiophene ring is optionally substituted by 1, 2, 3 or 4 R7 radicals, wherein R7 is, in each case, independently selected from the group consisting of (C1-C4)alkyl, F, Cl, Br, I, CN, NO₂, OH, O(C1-C4)-alkyl and COO(C1-C4)alkyl, and some or all of the hydrogen atoms of the alkyl radicals may be replaced by fluorine atoms;

10 or

R14 and R16 are each independently hydrogen or (C1-C4)alkyl, wherein some or all of the hydrogen atoms of the alkyl radicals may be replaced by fluorine atoms;

and

15 R15 and R17, together with the two carbon atoms to which they are bonded, form a saturated 5-, 6-, 7- or 8-membered carbocycle in which one or two carbon atoms may each independently be replaced by O, S, NH or N(C1-C4)alkyl and may be substituted by 1, 2, 3, 4, 5 or 6 R8 radicals

20 wherein R8 is, in each case, independently selected from the group consisting of (C1-C4)alkyl, O(C1-C4)alkyl, and COO(C1-C4)alkyl, and some or all of the hydrogen atoms of the alkyl radicals may be replaced by fluorine atoms;

R10, R11, R12 and R13

25 are each independently hydrogen, F or (C1-C4)alkyl, wherein some or all of the hydrogen atoms of the alkyl radicals may be replaced by fluorine atoms;

wherein, either (i) A is an aromatic ring system, or (ii) the ring formed from R15 and R17 is an aromatic system and m is zero, or (iii) each of A and the ring formed from R15 and R17 is an aromatic ring system;

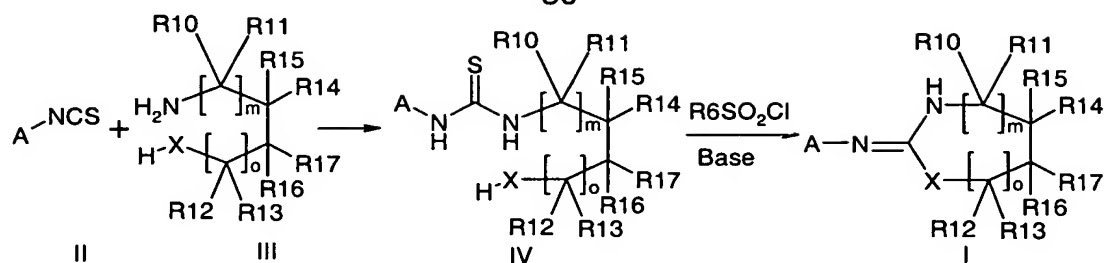
30 and their tautomers and their salts;

provided, however, that compounds in which A is unsubstituted phenyl or (C1-C4)alkyl; and X is oxygen; and R14 and R15 are each independently hydrogen, (C1-C4)alkyl or benzyl; and R16 and R17 are each hydrogen; and m and o are each zero are excluded;

35

which process comprises, as shown in scheme 1,

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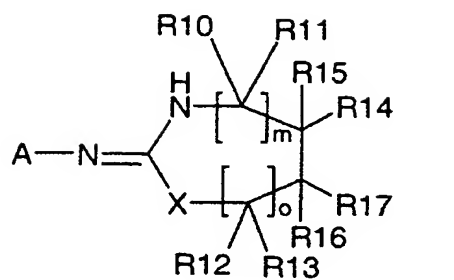


Scheme 1

a) reacting an isothiocyanate of formula II with a primary amine of formula III to give a thiourea of formula IV, and
 b) converting the thiourea of formula IV, using a sulfonyl chloride $\text{R}_6\text{SO}_2\text{Cl}$ in the

- 5 presence of a base, to said compound of formula I,
 where, in the compounds of the formulae II, III and IV,
 A, X, n, m and R10 to R17 are each as defined in formula I and
 R6 is (C1-C4)alkyl, trifluoromethyl or phenyl which is unsubstituted or
 substituted by methyl, trifluoromethyl, F, Cl, Br or a polymeric support.
- 10 2. The process of claim 1, in which the reaction is carried out as a one-pot reaction.
- 15 3. The process of claim 1, wherein steps a) and b) are each independently
 conducted continuously or batchwise.
- 20 4. The process of claim 1, wherein X is oxygen or NR5.
- 25 5. The process of claim 1, wherein X is NR5.
6. The process of claim 1, wherein A is phenyl, thienyl or isoxazolyl, each of
 which may be substituted as specified in claim 1.
7. The process of claim 1, wherein R6 is phenyl or p-methylphenyl.
8. The process of claim 1, wherein the base used in step b) is sodium hydroxide or
 potassium hydroxide.
9. A process for preparing a compound of the formula I as defined in claim 1

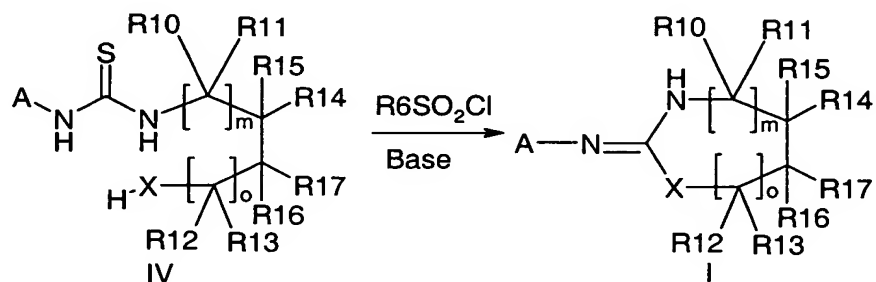
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which comprises

converting a thiourea of the formula IV to a compound of formula I using a

5 sulfonyl chloride R_6SO_2Cl in the presence of a base



wherein

10 A, X, o, m, R_6 and R_{10} to R_{17} are each as defined in claim 1.

15